REMARKS

Claims 8-19 are pending in the present application after this amendment adds new claims 12-19. No new matter is added by the new claims, which find support throughout the specification and figures. In particular, the new claims find support at least at page 5, line 27, *et. seq*. In view of the amendments and the following remarks, favorable reconsideration of this case is respectfully requested.

102(e) Rejection

Claims 8 and 10-11 stand rejected under 35 U.S.C. §102 (e) as being anticipated by United States Patent No. 6,249,044 to Kao et al. (hereinafter Kao). Applicant respectfully traverses.

Claim 8 relates to a method of manufacturing a flip-chip type semiconductor device. The method includes, *inter alia*, injecting an insulating resin between a semiconductor substrate and a support plate.

Kao does not teach ***injecting an insulating resin*** between the semiconductor substrate and the support plate. The Examiner asserts that Kao discloses such a layer inherently, and asserts that layer 33 and layer 35 of Kao perform the same function as an insulating resin. (Office Action; page 4, lines 3-4). However, neither layer 33 nor layer 35 of Kao is injected, and neither layer is a resin layer. Layer 33 is apparently a passivation layer composed of silicon dioxide (Kao; col. 4, line 26) and is apparently deposited. (Kao; col. 3, lines 36-38). Similarly, layer 35 is apparently a resilient layer composed of polymide (Kao; col. 4, lines 27-28) and is apparently deposited. (Kao; col. 4, lines 1-3).

As seen from figures 3B to 3E of Kao, the light shield 22 is apparently formed simultaneously with the forming of the under bump metal layer 37. Also, according to column 4, lines 1 to 7, of Kao, firstly the resilient for resilient layer 35 is apparently formed and thereafter layer 37 is apparently formed on the resilient layer 35. Therefore, the resilient layer 35 is apparently deposited before the forming of layer 37, and therefore ***there is no resin injected between*** the semiconductor substrate 31 and layer 37.

Additionally, the Examiner's reliance on inherency is improper.

> To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.'

In re Robertson, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (citations omitted). "In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." Ex parte Levy, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis in original). As applied to the present application, not only does Kao not inherently discuss injecting a resin layer by showing that such a teaching necessarily follows from the disclosure of Kao, Kao actually teaches away from such teaching. Since Kao does not teach injecting resin, Kao does not anticipate claim 8.

Claims 10-11 are allowable based on their dependence on claim 8.

103(a) Rejections

Claim 9 stands rejected under 35 U.S.C. §103 (a) as being unpatentable over Kao. Applicant respectfully traverses.

Claim 9 depends from claim 8 and is therefore allowable for at least the same reasons as claim 8 is allowable.

Additionally, claim 9 recites that the support plate is made of a conductive material. The modification of Kao to use conductive material to make the support is not obvious based on Kao. The use of a conductive support plate in this context is not obvious, and Kao does not provide any motivation for using conductive material for the support.

Furthermore, claim 9 recites that the method includes burying a conductive adhesive agent into a hole of the support plate located at the metal bump. Kao does not disclose burying a conductive adhesive agent into the hole of the support plate located at the metal bump, as recited in claim 9. Therefore, for at least these additional reasons, claim 9 is allowable.

New Claims

New claims 13-15 depend from claim 8 and are therefore allowable for at least the same reasons as claim 8 is allowable.

New claim 16 relates to a method of manufacturing a flip-chip type semiconductor device that includes, *inter alia*, injecting an insulating resin between the semiconductor substrate and the support plate. In the method of claim 16, a first number of holes is equal to a second number of metal bumps, each hole includes a first diameter larger than a second diameter of each metal bump, and each hole is at a first position corresponding to a second position of each metal bump.

It is respectfully submitted that Kao does not disclose or suggest the features of new claim 16 discussed above. Therefore, it is respectfully submitted that new claim 16 is allowable.

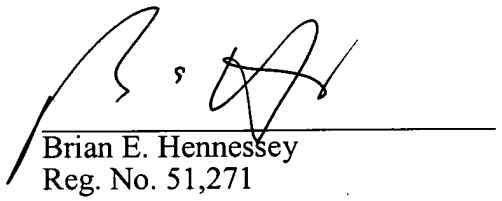
New claims 17-19 depend from new claim 16 and are therefore allowable for at least the same reasons as claim 16 is allowable.

CONCLUSION

In view of the remarks set forth above, this application is believed to be in condition for allowance which action is respectfully requested. However, if for any reason the Examiner should consider this application not to be in condition for allowance, the Examiner is respectfully requested to telephone the undersigned attorney at the number listed below prior to issuing a further Action.

Any fee due with this paper may be charged to Deposit Account No. 50-1290.

Respectfully submitted,



Brian E. Hennessey
Reg. No. 51,271

CUSTOMER NUMBER 026304
Telephone: (212) 940-8800
Fax: (212) 940-8986/8987
Docket No.: NECF 18.363A (100806-00248)
BEH:pm